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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,640	07/29/2003	Maher Amer	9931-031	6843

20575 7590 08/15/2007  
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EXAMINER	
LAFORGIA, CHRISTIAN A	

ART UNIT	PAPER NUMBER
2131	

MAIL DATE	DELIVERY MODE
08/15/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/629,640	AMER, MAHER	
	<b>Examiner</b>	<b>Art Unit</b>	
	Christian La Forgia	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 December 1899.
- 2a) ☐ This action is **FINAL**.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 6-20 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
  - Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
  - Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some \*    c) ☐ None of:
    - 1. ☐ Certified copies of the priority documents have been received.
    - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 27 July 2007 has been entered.
2. Claims 1-4 and 6-20 have been presented for examination.
3. Claim 5 has been cancelled as per Applicant's request.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-4 and 6-20 have been considered but are moot in view of the new grounds of rejection.
5. See further rejections that follow.

### ***Claim Objections***

6. Claims 17-20 are objected to because it recites "a predict logic block to generate the current state of the subset responsive an immediately preceding state of the subset." For the purposes of examination the Examiner will construe the claim to read as, "a predict logic block to generate the current state of the subset responsive to an immediately preceding state of the subset." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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8. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 20 refers to IEEE 802.11a. It is unclear as to which version of the IEEE 802.11a specification the Applicant is referring and if the claim is intended to cover future versions of the 802.11a specification.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-4, 6-13 and 17-20 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 7,106,859 B2 to Myszn, hereinafter Myszn.

11. As per claim 1, Myszn teaches a system for processing a set of data bits comprising:

storage means for storing the set of data bits (Figure 2 [N bits incoming data], column 1, lines 53-57, i.e. registers or memory to store the incoming data bits);

digital logic means for determining a subset of a serial sequence of scramble bits by applying a generating polynomial to the serial sequence of scramble bits (Figure 1 [block 10], column 1, lines 59-67, i.e. a polynomial or “m-sequence” generator);

generating means for generating the subset responsive to an immediately preceding state of the subnet (column 1, line 59 to column 2, line 4, i.e. generator is cyclic); and

digital operation means for performing a bitwise parallel digital operation between each bit of the set of data bits with at least one corresponding of the subset to produce an output set of data bits (Figure 2 [block 26], column 2, lines 10-16);

where a number of bits in the subset corresponds to a periodicity of the serial sequence of scramble bits (column 1, line 59 to column 2, line 4, column 3, lines 32-40, i.e. generator is cyclic, reading the last row of swath **52** provides the first three values of the m-sequence, the next swath).

12. Regarding claim 2, Myszne teaches wherein the system is adapted to scramble the set of data bits using the subset (Figure 2 [block 26], column 2, lines 10-16).

13. Regarding claim 3, Myszne teaches wherein the system is adapted to scramble the set of data bits using the subset (Figure 2 [block 26], column 2, lines 10-16).

14. Regarding claims 4 and 10, Myszne teaches receiving means including multiplexing means for receiving the serial sequence of scramble bits (Figure 4 [block 35], column 2, lines 55-60).

15. With regards to claims 6 and 11, Myszne teaches wherein the digital logic means includes combinational logic means for logically manipulating the serial sequence of scramble bits (Figure 1 [block 10], column 1, lines 59-67).

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16. Regarding claims 7 and 9, Myszne teaches wherein the bitwise parallel operation includes a bitwise parallel XOR operation (column 2, lines 10-16).

17. As per claim 8, Myszne teaches a digital scrambler/descrambler using a subset of a serial sequence of scrambler bits, the scrambler/descrambler comprising:

selection means for selecting between a first set of data bits to be scrambled and a second set of data bits to be descrambled (Figure 2 [block 24], column 2, lines 10-16);

digital logic means for determining a subset of the serial sequence of scrambler bits (Figure 1 [block 10], column 1, lines 59-67, i.e. a polynomial or “m-sequence” generator), the subset being determined based on an immediately preceding subset of the serial sequence of scrambler bits (column 1, line 59 to column 2, line 4, i.e. generator is cyclic);

digital operation means for executing a bitwise parallel digital operation between the subset and either the first or second set of data bits (Figure 2 [block 26], column 2, lines 10-16);

where a number of bits in the subset corresponds to a periodicity of the serial sequence of scramble bits (column 1, line 59 to column 2, line 4, column 3, lines 32-40, i.e. generator is cyclic, reading the last row of swath 52 provides the first three values of the m-sequence, the next swath).

18. With regards to claim 12, Myszne teaches wherein the digital logic means includes a digital storage means for storing the immediately preceding subset (Figures 3A, 3B, 4 [blocks 36, 42], column 2, lines 33-54, column 3, lines 7-40).

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19. As per claim 13, Myszne teaches a method of processing a plurality of data bits using a subset of a recurring sequence of scrambler bits, the method comprising:

a) storing in parallel the plurality of data bits (Figure 2 [N bits incoming data], column 1, lines 53-57, i.e. registers or memory to store the incoming data bits);

b) determining a subset of the recurring serial sequence of scrambler bits based on an immediately preceding subset of the recurring serial sequence of scrambler bits (Figures 1 [block 10], 3A, 3B, 4 [blocks 36, 42], column 1, line 59 to column 2, line 4, column 2, lines 33-54, column 3, lines 7-40, i.e. a polynomial or “m-sequence” generator that is cyclic);

c) generating the subset where, for each bit of the plurality of data bits, at least one bit of the appropriate subset is associated therewith (Figure 1 [block 10], column 1, lines 59-67, i.e. a polynomial or “m-sequence” generator);

d) performing a bitwise parallel XOR operation between each bit of the plurality of data bits and the at least one bit of the subset associated therewith to produce an output set of data bits (Figure 2 [block 26], column 2, lines 10-16);

where a number of bits in the subset corresponds to a periodicity of the recurring serial sequence of scramble bits (column 1, line 59 to column 2, line 4, column 3, lines 32-40, i.e. generator is cyclic, reading the last row of swath 52 provides the first three values of the m-sequence, the next swath).

20. Regarding claim 14, Myszne teaches performing logical operations between specific scrambler bits of said immediately preceding subset (Figures 3A, 3B, 4 [blocks 36, 42], column 2, lines 33-54, column 3, lines 7-40).

21. Regarding claim 15, Myszne teaches performing logical operations between specific scrambler bits of the immediately preceding subset (Figures 3A, 3B, 4 [blocks 36, 42], column 2, lines 33-54, column 3, lines 7-40).

22. Regarding claim 16, Myszne teaches loading the subset in a register (Figures 2 [block 2], 4 [block 32], column 1, lines 54-58, column 2, lines 10-16).

23. As per claim 17, Myszne teaches a scrambler, comprising:

a register block to store a current state of a subset of a recurring serial sequence of scramble bits (Figure 1 [block 10], column 1, lines 54-67);

a predict logic block to generate the current state of the subset responsive an immediately preceding state of the subset (Figures 3A, 3B, 4 [blocks 36, 42], column 2, lines 33-54, column 3, lines 7-40);

a scramble logic block to scramble a data set in parallel with the current state of the subset (Figure 2 [block 26], column 2, lines 10-16);

where the number of bits in the current state of the subset corresponds to a periodicity of the recurring serial sequence of scramble bits (column 1, line 59 to column 2, line 4, column 3, lines 32-40, i.e. generator is cyclic, reading the last row of swath 52 provides the first three values of the m-sequence, the next swath).



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24. Regarding claim 18, Myszne teaches a multiplexer block to multiplex a serial version of the data set to create a parallel version of the data set (Figure 4 [block 35], column 2, lines 55-60).

25. Regarding claim 19, Myszne teaches where the predict logic block or the scramble logic block includes a corresponding plurality of parallel combinational sub blocks (Figures 3A, 3B, 4 [blocks 36, 42], column 2, lines 33-54, column 3, lines 7-40).

26. Regarding claim 20, Myszne teaches where the predict logic block is configured to determine the current state of the subset by applying a generator polynomial defined in the IEEE 802.11a (column 1, lines 54-67). The Applicant states at page 5 that an example of a generating polynomial, according to IEEE 802.11a, is  $x^7 + x^4 + 1$ . Myszne discloses the identical formula at column 1, line 64, and therefore discloses a generator polynomial in accordance with IEEE 802.11a.

#### ***Remarks***

27. Applicant is advised that should claim 2 be found allowable, claim 3 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

28. Applicant is advised that should claim 14 be found allowable, claim 15 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an

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application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Conclusion***

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian La Forgia whose telephone number is (571) 272-3792.

The examiner can normally be reached on Monday thru Thursday 7-5.

30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

31. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christian LaForgia  
Patent Examiner  
Art Unit 2131

A handwritten signature in black ink, appearing to be 'CLF', written over a horizontal line.

clf